

7-19-2021

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[10.1080/00049530.2021.1952850](https://doi.org/10.1080/00049530.2021.1952850)

This is an Accepted Manuscript of an article published by Taylor & Francis in AUSTRALIAN JOURNAL OF PSYCHOLOGY on 19/07/2021, available online: <http://www.tandfonline.com/10.1080/00049530.2021.1952850>. Adams, C., Gringart, E., Strobel, N., & Masterman, P. (2021). Help-seeking for mental health problems among older adults with chronic disease: An application of the theory of planned behaviour. *Australian Journal of Psychology*. Advance online publication.

<https://doi.org/10.1080/00049530.2021.1952850>

This Journal Article is posted at Research Online.

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## **Help-Seeking for Mental Health Problems among Older Adults with Chronic Disease: An Application of the Theory of Planned Behaviour**

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**Key points*****What is already known about this topic?***

- Older adults aged 65 years or over living with chronic disease are at an increased risk of mental health decline
- Older adults underutilise mental health services, and consequently mental health problems often go undiagnosed and untreated in this population
- A growing body of research has demonstrated the utility of the Theory of Planned Behaviour in predicting intentions to seek mental health support services

***What this topic adds?***

- Most older adults with chronic disease have some intention to seek professional mental health support when needed
- Older adults with chronic disease have a high perceived ability to seek professional help
- Promoting favourable attitudes towards mental health help-seeking is likely to facilitate the greatest change in help-seeking intentions in the present population

### **Abstract**

Objective: Despite high risk for mental health problems, older adults with chronic diseases underutilise mental health services. This study applied the Theory of Planned Behaviour (TPB) to understand mental health help-seeking intentions among this population and identified factors which influence help-seeking intentions. Method: We conducted a cross-sectional study with a non-clinical sample of 108 older adults aged 65 years or over, living with cardiovascular disease, respiratory disease, and/or type 2 diabetes. TPB variables (attitudes, subjective norms, and perceived behavioural control), intentions to seek help, and additional factors (past help-seeking behaviour, quality of life, and physical health) were assessed using standardised questionnaires. Multiple linear regressions were conducted to identify predictors of help-seeking intentions. Results: 41% of the participants did not intend to seek help, and all three TPB variables were associated with help-seeking intentions. The traditional TPB model accounted for 69.7% of the variance in intentions, and the extended TPB model accounted for an additional 1.6% of the variance. Conclusions: Attitudes and perceived behavioural control have the strongest association with help-seeking intentions among older adults with chronic disease. Further research is needed to identify predictors of mental health help-seeking behaviour and to develop interventions to promote help-seeking in this population.

## Introduction

Chronic diseases are the primary cause of mortality and disability worldwide (World Health Organization, 2018). The global burden of chronic disease is largely attributable to population ageing (Prince et al., 2015). Older adults have higher rates of chronic disease than other age group, which can impair functioning and independence, leaving this population more vulnerable to mental health problems (Johnson & Conner, 2019; Watson, 2008).

Mental health problems significantly impact older adults' health outcomes. Reciprocity between chronic diseases and mental health problems increase symptoms' severity, risk of morbidity and mortality, the use of health services, and hinders functionality and quality of life (Godil et al., 2017; Han et al., 2018; Peltzer & Pengpid, 2016). Poor mental health is associated with greater risks of developing chronic physical conditions, and comorbidities, increasing the likelihood of mental health problems such as anxiety and depression (Clarke & Currie, 2009; Egede, 2005; Scott et al., 2016).

It is paramount that older adults with chronic disease engage professional mental health services when needed. Nevertheless, low rates of actual and intended help-seeking have been consistently noted (Chai et al., 2021; Chaplin et al., 2015; Olfson & Pincus, 1996; Westerhof et al., 2008). Given the increased risk of mental health declines in this population, improving help-seeking intentions, irrespective of existing diagnoses and/or current concerns, is essential for seeking early intervention, reducing the risk of having severe mental health problems, and alleviating the burden of disease.

One theoretical approach to understanding help-seeking for mental health problems is the Theory of Planned Behaviour (TPB). The TPB is a prominent theoretical model designed to predict and explain human behaviour (Ajzen, 1991). The TPB has been widely used to predict peoples' intentions and the performance of various health-related behaviours in numerous domains, including smoking cessation, substance use, eating behaviours, exercise,

breastfeeding, and oral hygiene (Cooke et al., 2016; Downs & Hausenblas, 2005; Godin & Kok, 1996; McDermott et al., 2015). The TPB has recently been applied to understanding and predicting psychological help-seeking intentions (Cuyler & Guerrero, 2019; Li et al., 2017; Pumpuang et al., 2018; Tomczyk et al., 2020; Zorrilla et al., 2019). The TPB is yet to investigate psychological help-seeking among older adults with chronic diseases.

Applying the TPB to human behaviour, authors have extended the theory to improve the efficiency of the model. Extended models have increased explanatory power and improved our understanding of various behaviours (Hamilton & White, 2008; McMahon & Byrne, 2008; Wang & Xu, 2021; White et al., 2008). For example, past behaviour was found to add independently to the prediction of intention and behaviour (Ajzen, 2011; Kidwell & Jewell, 2008). These relationships have been debated and further research encouraged (Ajzen, 2011; Conner & Armitage, 1998; Sommer, 2011). Few studies have examined the role of past behaviour on mental health help-seeking intentions and found some support for this association (Mackenzie et al., 2006; Zorrilla et al., 2019).

Psychological distress has also been included in extended models of the TPB (Aldalaykeh et al., 2019; Li et al., 2018; Mesidor & Sly, 2014). Whilst a positive and significant relationship between psychiatric symptomatology and help-seeking has been established (Komiti et al., 2006; Rickwood & Braithwaite, 1994; Wang et al., 2007), quality of life is of great interest in the gerontology and public health fields (Bowling et al., 2013; World Health Organization, 2015). Researchers emphasised the role of quality of life on successful ageing and positive health behaviours in people with chronic disease. For example, Fernández-Ballesteros (2011) noted reciprocity between quality of life and healthy ageing, stating that they may each predict the other. Further, good quality of life may be a protective factor against ill health and poor health behaviours among people with chronic disease and has been shown to predict help-seeking among people with health problems (Gartland et al.,

2019; Howard & Steggall, 2010; Pophali et al., 2018; Warner et al., 2016). Therefore, quality of life may be pertinent to mental health help-seeking in older adults with chronic disease. Quality of life, as a global measure, is also likely to align well with TPB variables of attitudes, subjective norms, and perceived behavioural control, which are considered global measures of individuals' underlying cognitive beliefs (Ajzen, 1991).

The present study applied the TPB to understand mental health help-seeking intentions among older adults with chronic diseases and associations between past help-seeking behaviour, quality of life, and physical health with help-seeking intentions. Older adults often have regular contact with primary health care services and report a preference for seeking mental health help from them over mental health professionals (Chai et al., 2021; Mackenzie et al., 2006). In Australia, mental illness prevention, early intervention strategies, and referrals to mental health services, are often delivered by primary health care providers (Department of Health, 2018). Professional help-seeking was therefore conceptualised as seeking help from a primary health care provider (e.g., family doctor, general practice nurse). Identifying what contributes to mental health help-seeking intentions would enable the development of targeted interventions to increase the likelihood of older adults with chronic diseases seeking help for mental health challenges when needed.

## **Materials and Methods**

### **Study Setting**

Cross-sectional data were collected using convenience sampling and snowballing from five independent living facilities, three health centres, six not-for-profit organisations, two local government agencies, and seven community groups in Perth, Western Australia, between April 2017 and May 2018.

## Participants

A sample of 132 participants aged 65 years or over, diagnosed with cardiovascular disease, respiratory disease, and/or type 2 diabetes were recruited. Participants were excluded if they had a diagnosis of dementia or cognitive problems or were not fluent in English. Participants provided written consent.

Of the 132 participants, nine declined to participate due to illness, six did not complete the study, three lost interest, two had memory issues, two were unable to be contacted for data collection, one did not have a diagnosis of chronic disease, and one had severe mental health issues and was deemed high risk. Thus, 108 participants completed the study (82% completion rate). Sample characteristics are presented in Table 1.

**Table 1**

*Demographic Characteristics of Study Participants (N = 107)*

Variables	n (%)
Sex	
Male	50 (46.7%)
Female	57 (53.3%)
Age (years)	
65-75	59 (55.1%)
75-85	33 (30.9%)
85+	15 (14.0%)
Accommodation	
Community	68 (63.6%)
Independent living facility	39 (36.4%)
Marital status	
Married/de-facto	54 (50.5%)
Not in a current relationship	53 (49.5%)
Living arrangements	
Living with a partner/family/friend	59 (55.1%)
Living alone	48 (44.9%)
Education	
School up to year 10	32 (29.9%)
Year 11 and above	75 (70.1%)
Employment status	
Employed	11 (10.3%)
Retired / unable to work	96 (89.7%)



Financial situation	
Not able to save	38 (35.5%)
Able to save now and then	29 (27.1%)
Able to save regularly / a lot	40 (37.4%)
Private health insurance	
Yes	66 (61.7%)
No	41 (38.3%)
Number of chronic diseases	
One	73 (68.2%)
Two or more	34 (31.8%)
Ever diagnosed with a mental health condition (previous/current)	
Yes	38 (35.5%)
No	69 (64.5%)
Past use of mental health services (self/family/friend)	
Yes	33 (30.8%)
No	74 (69.2%)

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There were 50 males and 57 females, age range 65-93 years (Mean age = 74.98,  $SD = 7.22$ ). Type 2 diabetes (45.8%,  $n = 49$ ) was most prevalent, followed by asthma (31.8%,  $n = 34$ ), and coronary heart disease (21.5%,  $n = 23$ ). Most participants (64.5%,  $n = 69$ ) had never been diagnosed with a mental health problem, and most (69.2%,  $n = 74$ ) never used mental health services.

## Data Collection

### *Demographic and Health Information*

Seen in Table 1, participants provided their age, sex, accommodation (community or independent living facility), marital status, living arrangements, level of education, employment status, financial situation, and health insurance status. Health information was also collected including the type and number of chronic diseases, psychiatric history, and past use of mental health services.

***Mental Health***

The Depression Anxiety Stress Scales (DASS-21) were used to indicate psychological distress. The DASS-21 is a 21-item self-report measure comprising three subscales measuring depression, anxiety and stress. The DASS-21 is a widely used measure of distress and has been validated for use among older adults in the community and in primary health care settings. The DASS-21 demonstrated good test-retest reliability, internal consistency, and construct validity (Gloster et al., 2008; Gomez et al., 2014; Wood et al., 2010). Responses to each item are measured on a 4-point scale (0-3), with higher scores indicative of greater psychological distress.

***Quality of Life***

Quality of life was measured using the World Health Organisation Quality of Life assessment (WHOQOL-BREF). The WHOQOL-BREF is a self-report scale assessing overall quality of life, overall satisfaction with health, and four quality of life domains; physical health, psychological health, social relationships and environment. This measure was developed as an abbreviation to the original 100-item WHOQOL, with only 24 items making it a more appropriate tool for clinical settings and research (WHOQOL Group, 1998). The WHOQOL-BREF correlates highly with the WHOQOL-100 ( $r = .89$  to  $.95$ ), has adequate internal consistency ( $\alpha$  ranging from  $.66$  to  $.84$ ) and test-retest reliability ( $r = .66$  to  $.87$ ) (WHOQOL Group, 1998). Responses to each item are measured on a 5-point scale (1-5) with higher scores indicating better quality of life. Raw scores were transformed to a 0 – 100 scale for each domain.

***Physical Disability***

The World Health Organisation Disability Assessment Schedule 2.0 (WHODAS) 12-item version was used to assess participants' overall functioning based on their health condition. The self-report version of the questionnaire was employed, with higher scores

indicative of greater impairment. The WHODAS is a relatively new tool adopted in the Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-5), and is considered a suitable measure of disability, appropriate for a variety of settings and populations (Federici et al., 2017). The 5-point scales are summed to create total raw and percentage scores.

### ***Theory of Planned Behaviour Variables***

A Theory of Planned Behaviour questionnaire was specifically developed to assess attitudes, subjective norms, perceived behavioural control, and intentions (Appendix A). Previous research, the TPB manual for health service researchers, and Ajzen's questionnaire construction were used in the development of the measure (Ajzen, 2006; Francis et al., 2004). Items are rated on 7-point scales (1-7) with higher scores indicating more favourable attitudes towards help-seeking, greater subjective norms to seek help, more control over one's behaviour, and greater intentions to seek help.

### **Pilot test**

A pilot test of the questionnaire was conducted with 54 older adults aged 65 years and over (Mean = 73.11,  $SD = 7.65$ , range = 65 to 94 years) who were recruited from seniors' centres, sporting clubs and social groups, between January 2017 and March 2017 using convenience sampling and snowballing. Participation was anonymous, and consent was given by the completion and return of the questionnaire (80.6% completion rate).

Internal consistency reliability was assessed through the calculations of Cronbach alpha and several refinements were made. Reliability testing in the present sample demonstrated acceptable internal consistency for each of the constructs (Cronbach's alpha .69 to .87).

### *Data Screening*

Using Mahalanobis distance, one multivariate outlier was identified and removed. A total of 107 cases remained for analysis. One extremely low univariate outlier was identified on the variable perceived behavioural control. It was adjusted by bringing it to the lowest value of the 95% confidence interval. Two missing responses were identified on the continuous demographic variable financial situation. The missing data were replaced by the mean for this item (Aljuaid & Sasi, 2016). In addition, there were 16 cases with missing data on the DASS-21 as it was not distributed to all participants. These were not replaced as systematic differences between the missing data and observed DASS-21 data are unlikely (Jakobsen et al., 2017; Sterne et al., 2009). Hence, only observed data were used for analyses with the DASS-21 ( $n = 91$ ). Characteristics of participants with missing DASS-21 data are presented in Supplementary Table 1. Assumptions of normality were met.

### *Statistical Analyses*

Descriptive statistics were calculated as counts and percentages for all categorical data and means and standard deviations for continuous data. To determine whether there were differences in help-seeking intentions as a function of demographics, a factorial ANOVA was conducted. Age, sex, accommodation, marital status, living arrangements, education, employment status, financial situation, private health insurance, number of chronic diseases, mental health diagnosis, and past use of mental health services were the independent variables. The dependent variable was participants' intentions to seek help.

Multivariate linear regression was conducted to identify factors associated with intentions to seek help. Intentions was the criterion variable in each regression model. The first model included only the theoretical predictors of the TPB, namely attitudes, subjective norms, and perceived behavioural control. The second model included the three theoretical predictors plus past use of mental health services (as a measure of past help-seeking

behaviour), overall quality of life, physical disability, and number of chronic diseases to determine whether extending the TPB to include additional variables identified in the literature improved model fit. Standardised coefficients and probability values were derived for each model.

Our sample size ( $N = 107$ ) allowed only seven variables in the extended model, as calculated by Tabachnick and Fidell (2019). Bivariate correlations were conducted between intentions and the study variables to explore other relationships, which may be associated with help-seeking intentions and warrant further research. Point-biserial correlations were conducted between dichotomous variables and intentions, and Pearson correlations were conducted between continuous variables and intentions.

Data were analysed using SPSS version 26.

### ***Ethics Approval***

Ethics approval was granted by the human research ethics committee of Edith Cowan University.

## **Results**

At the time of the study, one third of participants had clinically relevant symptoms of anxiety (31.9%,  $n = 29$ , cut-off score  $\geq 8$ ), over a quarter had clinically relevant symptoms of depression (26.4%,  $n = 24$ , cut-off score  $\geq 10$ ), and 23.1% ( $n = 21$ , cut-off score  $\geq 15$ ) had clinically relevant symptoms of stress (Thach et al., 2013). See Table 2 for means and standard deviations. There were 23 participants (25.3%) who had clinically relevant symptoms of more than one mental health condition. Overall quality of life and overall satisfaction with health were rated favourably (on a scale from 1 to 5, higher scores indicate better quality of life and greater satisfaction with health). Quality of life was greatest in the environment domain (86.7%), and poorest in the physical domain (66.0%) reflecting lower

quality of life for the overall sample's physical health. Overall functioning was high with a mean disability score of 6.65 out of a possible score of 48 (lower scores indicate better functioning).

**Table 2**

*Mental Health, Quality of Life, and Overall Functioning of Older Adults with Chronic Disease*

Variables	<i>M</i>	<i>SD</i>
DASS-21 <sup>1</sup>		
Overall distress	10.37	8.65
Depression	3.25	3.46
Anxiety	2.89	2.66
Stress	4.23	4.05
WHOQOL-BREF		
Overall quality of life	4.14	0.76
Overall satisfaction with health	3.44	0.99
Physical	66.02	18.34
Psychological	70.97	13.92
Social	68.03	19.68
Environment	86.68	12.27
WHODAS		
Overall physical disability	6.65	6.46

*Note.* <sup>1</sup>n = 91 for depression, anxiety, and stress scores. M = mean, SD = standard deviation.

Most participants (Mean = 4.85, Mode = 5) had some intention to seek help for mental health problems (Table 3). Perceived behavioural control was the highest of the TPB variables, indicating a perceived ability to seek help, and subjective norms rated the lowest, indicating a lack of perceived social pressure to seek help.

**Table 3**

*Attitudes, Subjective Norms, Perceived Behavioural Control and Intentions to Seek Help Among Older Adults with Chronic Disease (rated on 7-point scales)*

Variables	<i>M</i>	<i>SD</i>	Mode
Attitudes	5.00	0.90	4.75
Subjective norms	3.95	1.10	4.00
Perceived behavioural control	6.02	0.72	6.75
Intentions	4.85	1.39	5.00

*Note.* *M* = mean, *SD* = standard deviation.

### **Factors associated with Intentions to Seek Help**

A factorial ANOVA showed no significant interactions between intentions and demographic variables. A significant main effect on intentions was past use of mental health services,  $F(1,48) = 5.746, p = .02$ .

A multivariate linear regression of the TPB predictor variables attitudes, subjective norms, and perceived behavioural control on intentions to seek help found all three TPB variables were significantly associated with intentions,  $F(3, 103) = 79.05, p = .000$ . The traditional TPB model explained 69.7% of the variance in intentions to seek help for mental health problems. Attitudes ( $\beta = .54, p = .000$ ) and perceived behavioural control ( $\beta = .26, p = .000$ ) had the strongest influence on intentions, followed by subjective norms ( $\beta = .19, p = .008$ ).

When the TPB model was extended to include other key factors, the TPB variables remained the only variables significantly associated with intentions. Bivariate correlations between model components are presented in Table 4.

**Table 4***Bivariate Correlations between TPB Model Components*

Variables	1	2	3	4	5	6	7	8
1. Intentions	1	.77**	.65**	.60**	.28**	.01	.01	-.01
2. Attitudes	.77**	1	.60**	.46**	.44**	-.02	.05	-.08
3. Subjective norms	.65**	.60**	1	.52**	.03	.14	.13	-.10
4. Perceived behavioural control	.60**	.46**	.52**	1	.11	.21*	-.06	.17*
5. Past use of mental health services	.28**	.44**	.03	.11	1	-.29**	.14	.06
6. Overall quality of life	.01	-.02	.14	.21*	-.29**	1	-.40**	.22*
7. Physical disability	.01	.05	.13	-.06	.14	-.40**	1	.19*
8. Number of chronic diseases	-.01	-.08	-.10	-.17*	.06	-.22*	.19*	1

*Note.* \* $p < .05$  \*\* $p < .01$ .

The extended TPB model explained 71.3% of the variance in intentions to seek help. Attitudes ( $\beta = .53, p = .000$ ) and perceived behavioural control ( $\beta = .28, p = .000$ ) had the strongest influence on intentions across both TPB models (Table 5).

**Table 5***Multiple Linear Regressions of Traditional TPB and Extended TPB Models*

Variables	B	SE B	$\beta$
Regression 1 Traditional TPB			
Model TPB	-3.29	0.67	
Attitudes	0.84	0.11	.54**
Subjective norms	0.24	0.09	.19*
Perceived behavioural control	0.50	0.13	.26**
Regression 2 Extended TPB			
Model TPB	-3.18	0.87	
Attitudes	0.82	0.13	.53**
Subjective norms	0.28	0.10	.23*
Perceived behavioural control	0.54	0.13	.28**
Past use of mental health services	-0.02	0.20	-.01
Overall quality of life	-0.15	0.12	-.08



Physical disability	-0.02	0.01	-.08
Number of chronic diseases	0.23	0.13	.10

*Note.* Regression 1  $R^2 = .70$ , Regression 2  $R^2 = .71$ . \* $p < .05$  \*\* $p < .001$ . B = unstandardized coefficient, SE B = standard error,  $\beta$  = beta.

**Other Correlates of Intentions to Seek Help**

To gain further insight into factors that may influence help-seeking intentions (Supplementary Table 2), bivariate correlations were calculated between the study variables and intentions. Overall psychological distress (DASS-21) was significantly correlated with intentions. The relationship was small and negative ( $r = -.20, p = .028$ ). Interestingly, of the mental health subscales depression was the only variable significantly correlated with intentions. The relationship between depression and intentions was small and negative ( $r = -.25, p = .008$ ). Of the quality-of-life domains measured by the WHOQOL-BREF, the social and environment domains were significantly correlated with intentions. The relationship between the social domain and intentions was weak and positive ( $r = .30, p = .001$ ). The relationship between the environment domain and intentions was weak and positive ( $r = .29, p = .001$ ). Demographic variables were not strongly related to intentions.

**Discussion**

The current study applied the TPB to understand professional mental health help-seeking intentions among older adults with chronic disease. We investigated the influence of past help-seeking behaviour, quality of life, and physical health on help-seeking intentions.

In our sample, up to 30.8% had clinically relevant symptoms of psychological distress, comparable to previous studies that explored mental health help-seeking intentions (Mesidor & Sly, 2014; Westerhof et al., 2008; Zorrilla et al., 2019). Such rates are higher than rates of anxiety, depression and psychological distress among older adults in the community, yet expected among older adults with physical comorbidities (Australian

Institute of Health and Welfare, 2015). Including participants regardless of mental health diagnoses is advantageous. It strengthens the validity of our findings and their applicability to the subpopulation of older adults with chronic disease in the community, paving the way to promoting intentions to seek professional mental health support, which would not have been possible with a clinical sample.

All TPB predictor variables were significantly associated with intentions to seek help among older adults with chronic disease and the traditional TPB model explained 70% of the variance in intentions to seek help. Additional factors identified as significant in the literature only accounted for 1.6% of the variance in intentions, with the TPB variables accounting for nearly all of the variation. This is congruent with past research, suggesting the TPB is appropriate for predicting psychological help-seeking (Hess & Tracey, 2013; Hyland et al., 2012; Schomerus et al., 2009; Skogstad et al., 2006; Tomczyk et al., 2020; Zorrilla et al., 2019).

Attitudes and perceived behavioural control were the strongest predictors of intentions, followed by subjective norms, with the former having been consistently found to influence mental health help-seeking intentions (Cuyler, 2016; Mojtabai et al., 2016; Schomerus et al., 2009). Older adults with chronic disease frequently contact primary health care services, which may explain the high perceived behavioural control in our sample (Brenes et al., 2015; Pepin et al., 2009). Promoting positive attitudes towards mental health help-seeking through targeted interventions may, therefore, facilitate the greatest change in help-seeking intentions. Subjective norms was a significant predictor of help-seeking, secondary to attitudes and perceived behavioural control, which is consistent with past research (Armitage & Conner, 2001). In western cultures, people appear to be less influenced by normative pressures as they age, and are guided more by their own attitudes and motivations (Cuyler, 2016; Seyala, 2011; Westerhof et al., 2008). This contradicts non-

western cultures such as South Asia and China, which are collectivistic, and the views of family and community are strongly related to help-seeking (Mo & Mak, 2009; Pilkington et al., 2012; Thake, 2014).

Physical health status and quality of life were found to influence health-related attitudes and behaviours including help-seeking (Crabb & Hunsley, 2006; Garrido et al., 2011; Gartland et al., 2019; Howard & Steggall, 2010; Mojtabai et al., 2002; Roh et al., 2017), which is incongruent with our results that found no such statistically significant association among older adults with chronic disease. This is surprising given the well-established interrelationship between chronic disease and mental health, and evidence that poor quality of life and worse physical health are associated with help-seeking in primary health care and mental health care (Clarke & Currie, 2009; Crabb & Hunsley, 2006; Garrido et al., 2011; Gartland et al., 2019; Verhaak et al., 2005).

It is important to note that studies have predominantly explored help-seeking behaviour, not help-seeking intentions. Antecedents of intentions and behaviour may differ, as demonstrated by the intention-behaviour gap (Sheeran, 2002). Moreover, studies have often focused on populations with specific health conditions, such as urinary incontinence and irritable bowel syndrome, rather than chronic diseases (Howard & Steggall, 2010; Ringström et al., 2007). Previous research has highlighted the effect of disease trajectories on the help-seeking process, which may account for our incongruent findings (Pelaez et al., 2015). Help-seeking intentions may be better understood in the context of each disease, and established between chronic disease diagnostic groups.

Most of our participants (68.2%) had one chronic disease, and therefore we were not able to accurately measure the impact of physical comorbidities on help-seeking intentions. In Australia, 50.5% of adults 65 years and older have two or more chronic conditions, however this was not reflected in our study (Australian Institute of Health and Welfare,

2020). Interestingly, despite the non-significant result, the correlation between the number of chronic diseases and help-seeking intentions was negative ( $r = -.01$ ), contrary to past research (Roh et al., 2017). In line with Roh's reasoning, it is therefore possible that better physical health increases one's perceived ability to access services, reflected through participants' strong endorsement of perceived behavioural control. Future research could explore the relationship between physical health and help-seeking intentions in samples with greater physical and mental comorbidities.

Considering the strength of the association between TPB predictor variables and intentions, beyond status variables, it is likely that attitudinal and belief-based factors have the greatest influence on mental health help-seeking in this population. Factors such as mental health stigma and perceived need for professional help have been found to influence help-seeking (Barney et al., 2006; Karlin et al., 2008; Li et al., 2017; Wuthrich & Frei, 2015). Such psychological variables could be measured and examined in statistical models of the TPB in the mental health field to better understand and predict help-seeking intentions and behaviour.

Past use of mental health services, whilst significantly correlated with intentions, was not associated with intentions in our regression model. This may reflect the temporal stability of help-seeking, that is, its susceptibility to change over time. It has been argued that past behaviour is only strongly related to future intentions and behaviour if the behaviour and its antecedents are stable (Ajzen, 1991, 2011; Sommer, 2011). Past behaviour has been conceptualised in various ways in the literature, such as habits, frequency of behaviour, and past experience with the behaviour (Sommer, 2011). It is therefore possible that past behaviour is not as pertinent to help-seeking as it is to other health-related behaviours (e.g., exercise, diet) as help-seeking is unlikely to be frequent and habitual in a non-clinical sample.

Nevertheless, the role of past help-seeking has been widely debated in the literature and results are inconclusive. In the general field of health-related behaviours, past behaviour has been found to reliably predict intentions and behaviour (Ajzen, 2011; Kidwell & Jewell, 2008). In the field of mental health help-seeking, some support has been found for the direct and indirect effect of past help-seeking on intentions (Britt et al., 2011; Mackenzie et al., 2006; Stecker et al., 2010; Zorrilla et al., 2019). In the present population, older adults with chronic disease, an association between past behaviour and intentions may be detected in a larger sample. Still, Ajzen questions the role of past behaviour in the TPB as it is not a causal antecedent of intentions and may pose a fundamental threat to behaviour change, hence this topic remains unresolved and open to debate (Ajzen, 2011).

When examining other correlates of mental health help-seeking, overall psychological distress and depression symptoms were significantly correlated with intentions, however an inverse association was found. This suggests that as the severity of symptoms increase, intentions to seek help decreases. Whilst we acknowledge that the correlation between distress and intentions was weak ( $r < -.30$ ) it is likely that a larger sample size would have shown a stronger association. Although we expected a positive relationship between psychiatric symptomatology and intentions to seek help, there is a body of research, which supports our findings. Some authors found symptom severity did not predict help-seeking intentions (Logsdon et al., 2018; Mackenzie et al., 2006; Mak & Davis, 2014). Researchers who have found a negative relationship between psychological distress and help-seeking intentions speculate this is due to unfavourable treatment beliefs or impairments in coping strategies as distress increases (Ward-Ciesielski et al., 2019; Wilson, 2010). This reinforces the role of belief-based factors in shaping behavioural intentions. Cognitive-behavioural theories may also help to explain this finding, as theories of depression suggest helplessness, hopelessness and negativity are key components of depressed mood (Haaga et al., 1991; Liu

et al., 2015; Pryce et al., 2011). Such symptoms can reduce help-seeking intentions (Nagai, 2015).

One of the main strengths of the present study is the composition of the sample. Age and gender distributions of participants were comparable to that of older adults in Australia according to the latest Census of Population and Housing (Australian Bureau of Statistics, 2016). To establish generalisability of the results a larger and representative sample is required. A larger sample size may also improve our ability to identify further significant predictors of intentions. Nevertheless, the sample size was sufficient to conduct multiple regression analyses and detect important factors associated with mental health help-seeking.

Furthermore, participants were recruited from numerous avenues including independent living facilities, health centres, non-government organisations and local governments thereby reducing sampling bias. It is possible that self-selection bias affected the findings as our participants may have been among those more likely to engage in the first place. Attempts were made to overcome this by random selection of potential participants from a registry when recruiting through health centres and notifying all eligible participants at independent living facilities of the study. Despite the potential bias it was important to allow participants to self-select to ensure voluntary participation and participants confidentiality.

Notably, the cross-sectional nature of our study limited our ability to predict help-seeking intentions and restricts the inferences we can draw. Longitudinal research could identify predictors of actual intentions and behaviour, and inform primary health care and mental health care practice.

In the context of mental health help-seeking, our study was one of the few that extended the TPB to a population at risk of mental and physical decline, and to our knowledge, is the first to apply the TPB to older adults with chronic disease in this context.

Applying the TPB to at-risk populations is important as they are in the greatest need of early intervention to prevent morbidity and mortality.

### **Conclusions**

Our findings support the TPB in understanding mental health help-seeking intentions. Attitudes, perceived behavioural control, and subjective norms are important to intentions to seek help. Our study provides valuable insights into mental health help-seeking and paves the way for future research in the area. To improve our knowledge, further attitudinal and belief-based variables, such as mental health stigma and perceived need, could be considered with the TPB in the mental health field. Different chronic disease diagnostic groups could also be considered, as some disorders may have unique predictors of help-seeking. Experimentation could identify actual predictors of mental health help-seeking intentions and behaviour, and how to best intervene to increase help-seeking in this population. Finally, initiatives such as Telehealth and eTherapy are reducing physical barriers to health care and are being increasingly used in the community (Healthdirect, 2019; Johnson et al., 2012). Applying the TPB to understand online help-seeking is a growing field and a feasible way forward in the current climate.

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